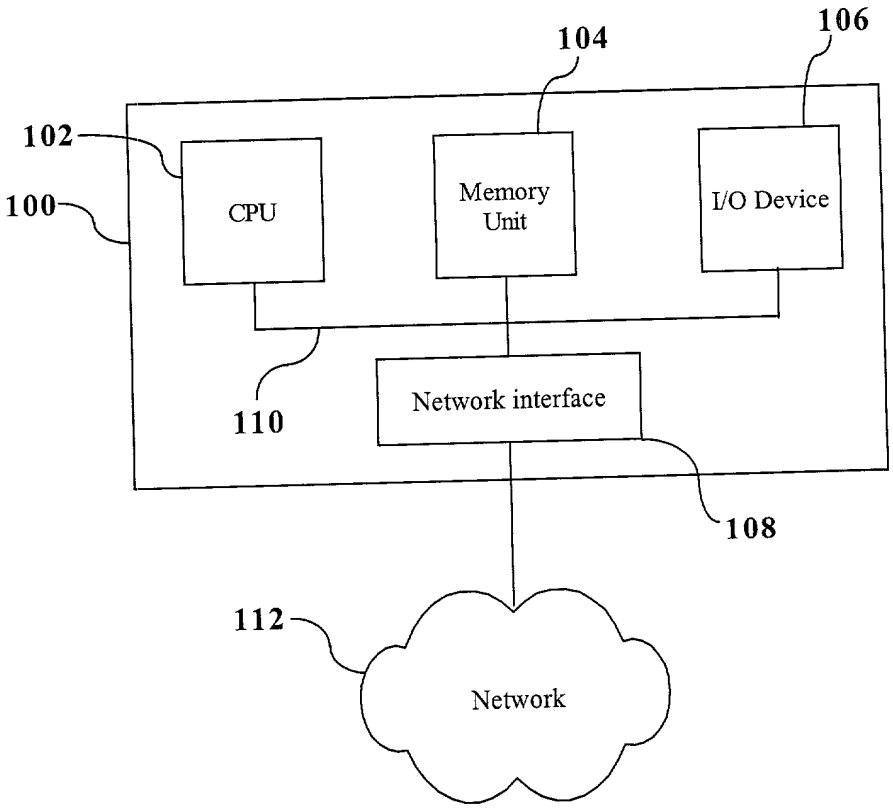
104
106
102
100
CPU
Memory Unit
I/O Device
110
Network interface
108
112
Network

Fig. 1

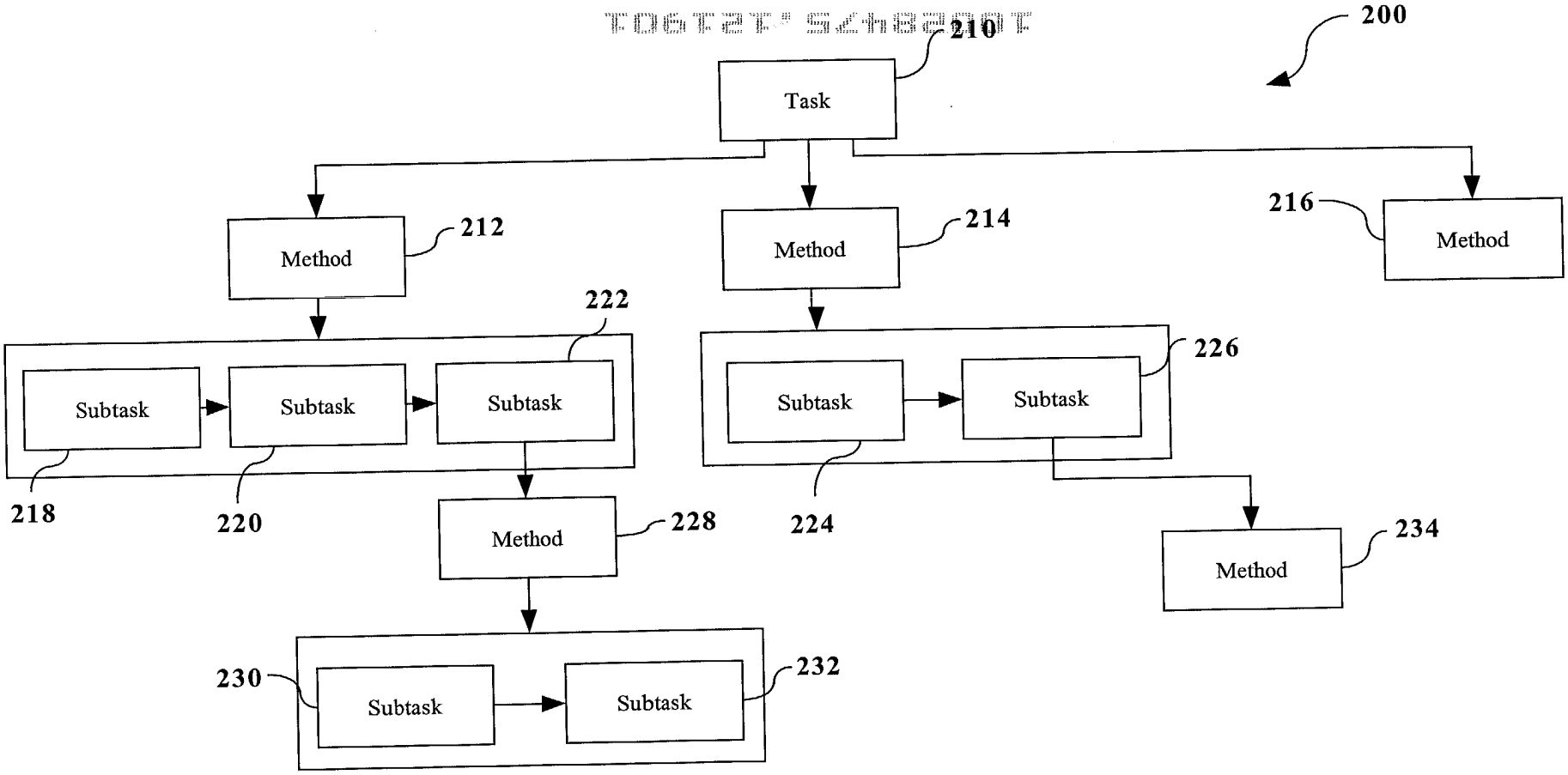
200
210
Task
Method
212
Method
214
216
Method
222
Subtask
Subtask
Subtask
218
220
Method
228
Subtask
Subtask
226
224
Method
234
230
Subtask
Subtask
232

Fig. 2

TOILET				
Structure				
Components				
Name	*Type*			
Bowl	Container			
Tank	Container			
Valve	Valve			
Flapper	RubberPart			
Float	Float			
Handle	MetalPart			
Drain	Pipe			
Source	Pipe			
Connections				
Name	*Type*	*From*	*To*	*Substance*
C1	Pipe	Tank	Bowl	Water
C2	Pipe	Bowl	Drain	Water
C3	Chain	Handle	Flapper	Userpress
C4	Hinge	Flapper	Tank	
C5	Lever	Float	Valve	Vector
C6	Pipe	Valve	Tank	Water
C7	Pipe	Source	Valve	Water
Behaviors				
Name	*Type*			
Fill	Procedure			
Flush	Method			
Function				
Name	*Behavior*			
Clean	Flush			
Given Name	*Given Type*			
Clean water	Liquid			
Force on handle	Force			
Makes Name	*Makes Type*			
Clean bowl	Container			
Substance				
Water	Liquid			
Userpress	Force			
Vector	Force			

Fig. 3

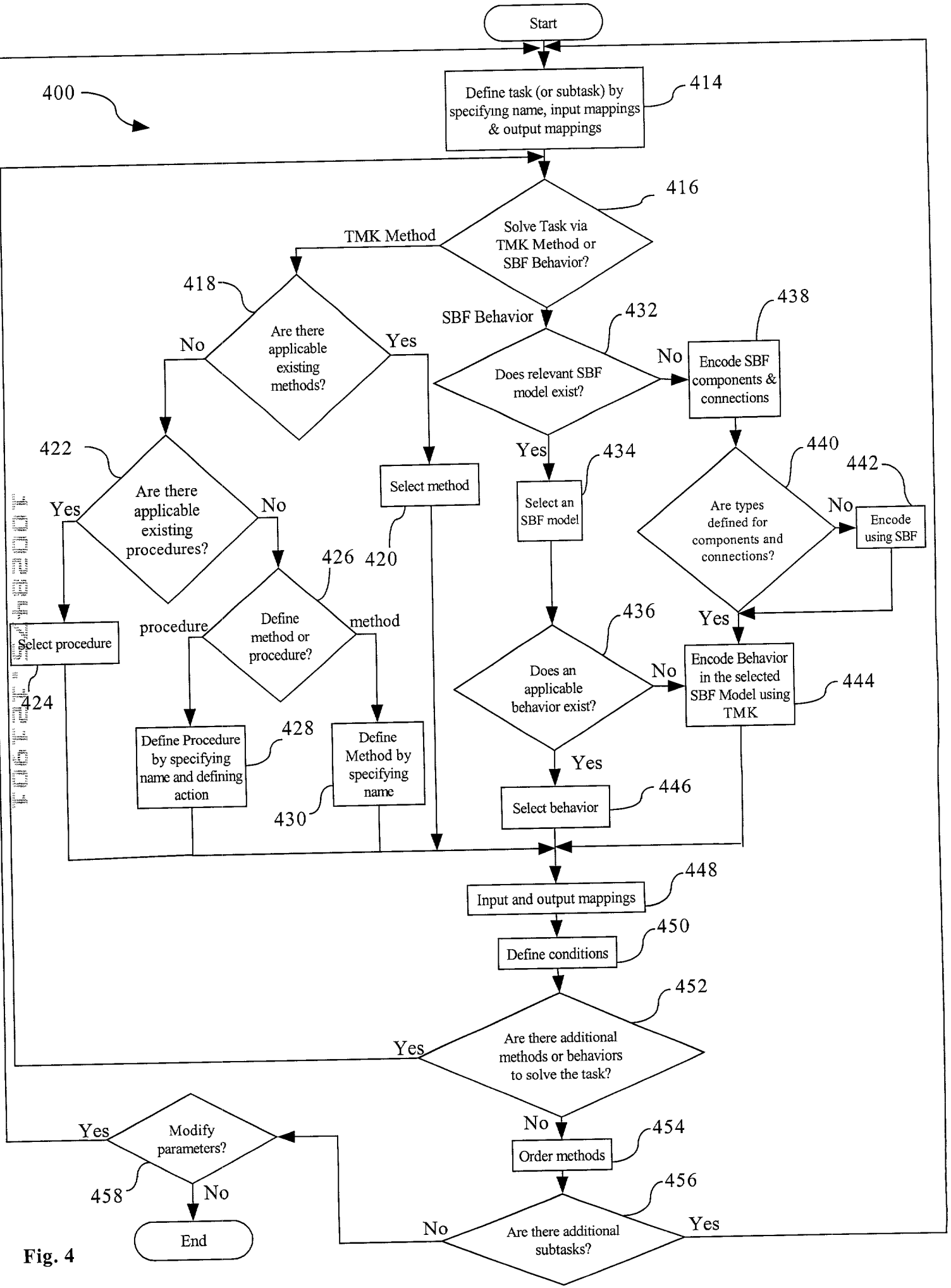
Start
400
Define task (or subtask) by specifying name, input mappings & output mappings
414
Solve Task via TMK Method or SBF Behavior?
416
TMK Method
SBF Behavior
Are there applicable existing methods?
418
No
Yes
Does relevant SBF model exist?
432
No
Encode SBF components & connections
438
Yes
Are there applicable existing procedures?
422
Yes
No
Select method
420
Select an SBF model
434
Are types defined for components and connections?
440
No
Encode using SBF
442
Yes
Define method or procedure?
426
procedure
method
Select procedure
424
Define Procedure by specifying name and defining action
428
Define Method by specifying name
430
Does an applicable behavior exist?
436
No
Encode Behavior in the selected SBF Model using TMK
444
Yes
Select behavior
446
Input and output mappings
448
Define conditions
450
Are there additional methods or behaviors to solve the task?
452
Yes
No
Modify parameters?
458
Yes
No
Order methods
454
Are there additional subtasks?
456
No
Yes
End

Fig. 4

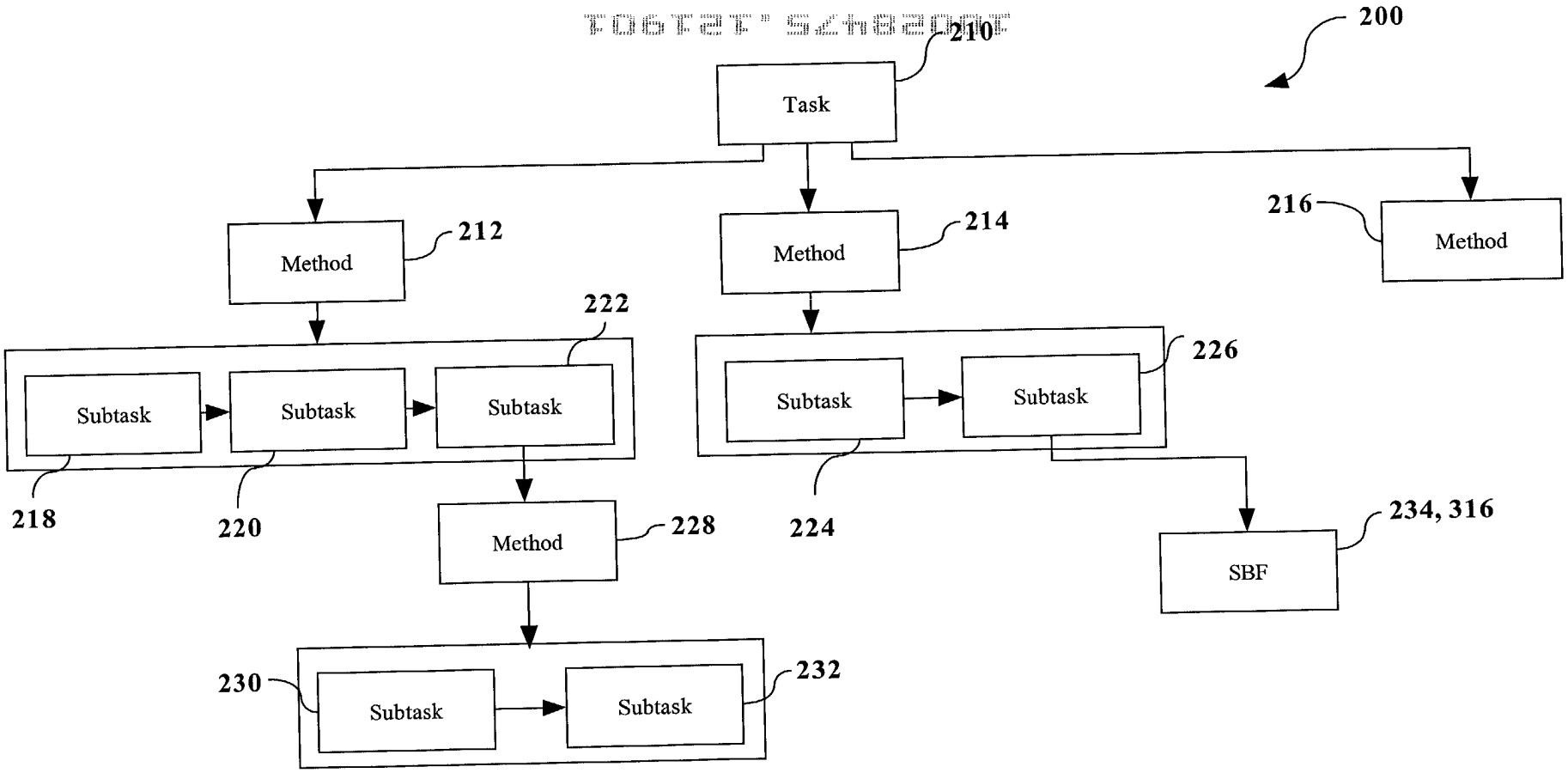
200
210
Task
Method
212
Method
214
216
Method
222
226
Subtask
Subtask
Subtask
Subtask
Subtask
218
220
224
Method
228
SBF
234, 316
230
232
Subtask
Subtask

Fig. 5

TOILET				
Structure				
Components				
Name	*Type*			
Bowl	Container			
Tank	Container			
Valve	Valve			
Flapper	RubberPart			
Float	Float			
Handle	MetalPart			
Drain	Pipe			
Source	Pipe			
Connections				
Name	*Type*	*From*	*To*	*Substance*
C1	Pipe	Tank	Bowl	Water
C2	Pipe	Bowl	Drain	Water
C3	Chain	Handle	Flapper	Userpress
C4	Hinge	Flapper	Tank	
C5	Lever	Float	Valve	Vector
C6	Pipe	Valve	Tank	Water
C7	Pipe	Source	Valve	Water
Behaviors				
Name	*Type*			
Fill	TMK Procedure			
Flush	Method			
Function				
Name	*Behavior*			
Clean	Flush			
Given Name	*Given Type*			
Clean water	Liquid			
Force on handle	Force			
Makes Name	*Makes Type*			
Clean bowl	Container			
Substance				
Water	Liquid			
Userpress	Force			
Vector	Force			

Fig. 6

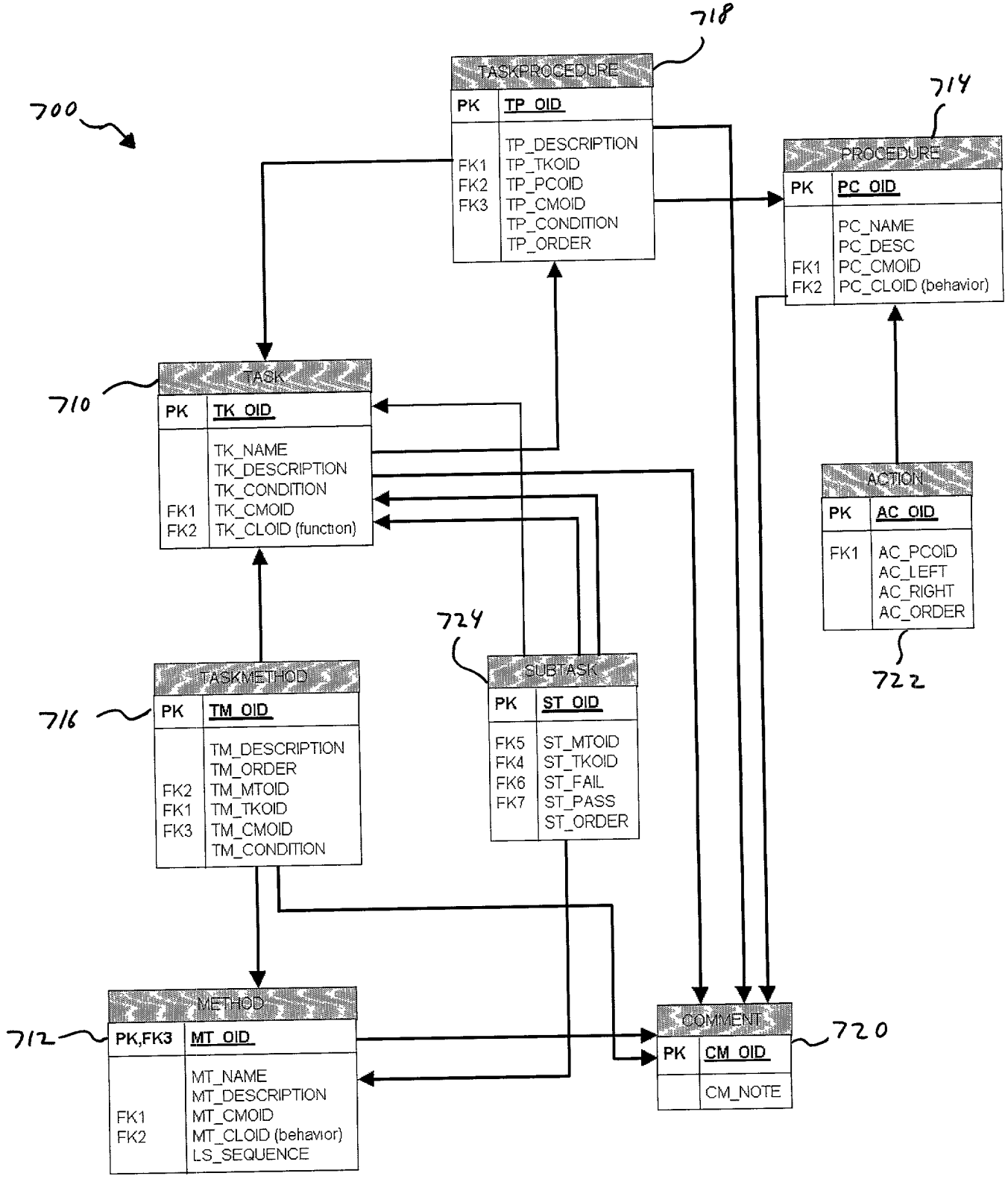
700
718
TASKPROCEDURE
PK TP_OID
TP_DESCRIPTION
FK1 TP_TKOID
FK2 TP_PCOID
FK3 TP_CMOID
TP_CONDITION
TP_ORDER
714
PROCEDURE
PK PC_OID
PC_NAME
PC_DESC
FK1 PC_CMOID
FK2 PC_CLOID (behavior)
710
TASK
PK TK_OID
TK_NAME
TK_DESCRIPTION
TK_CONDITION
FK1 TK_CMOID
FK2 TK_CLOID (function)
ACTION
PK AC_OID
FK1 AC_PCOID
AC_LEFT
AC_RIGHT
AC_ORDER
722
724
SUBTASK
PK ST_OID
FK5 ST_MTOID
FK4 ST_TKOID
FK6 ST_FAIL
FK7 ST_PASS
ST_ORDER
716
TASKMETHOD
PK TM_OID
TM_DESCRIPTION
TM_ORDER
FK2 TM_MTOID
FK1 TM_TKOID
FK3 TM_CMOID
TM_CONDITION
712
METHOD
PK,FK3 MT_OID
MT_NAME
MT_DESCRIPTION
FK1 MT_CMOID
FK2 MT_CLOID (behavior)
LS_SEQUENCE
COMMENT
720
PK CM_OID
CM_NOTE

Fig. 7

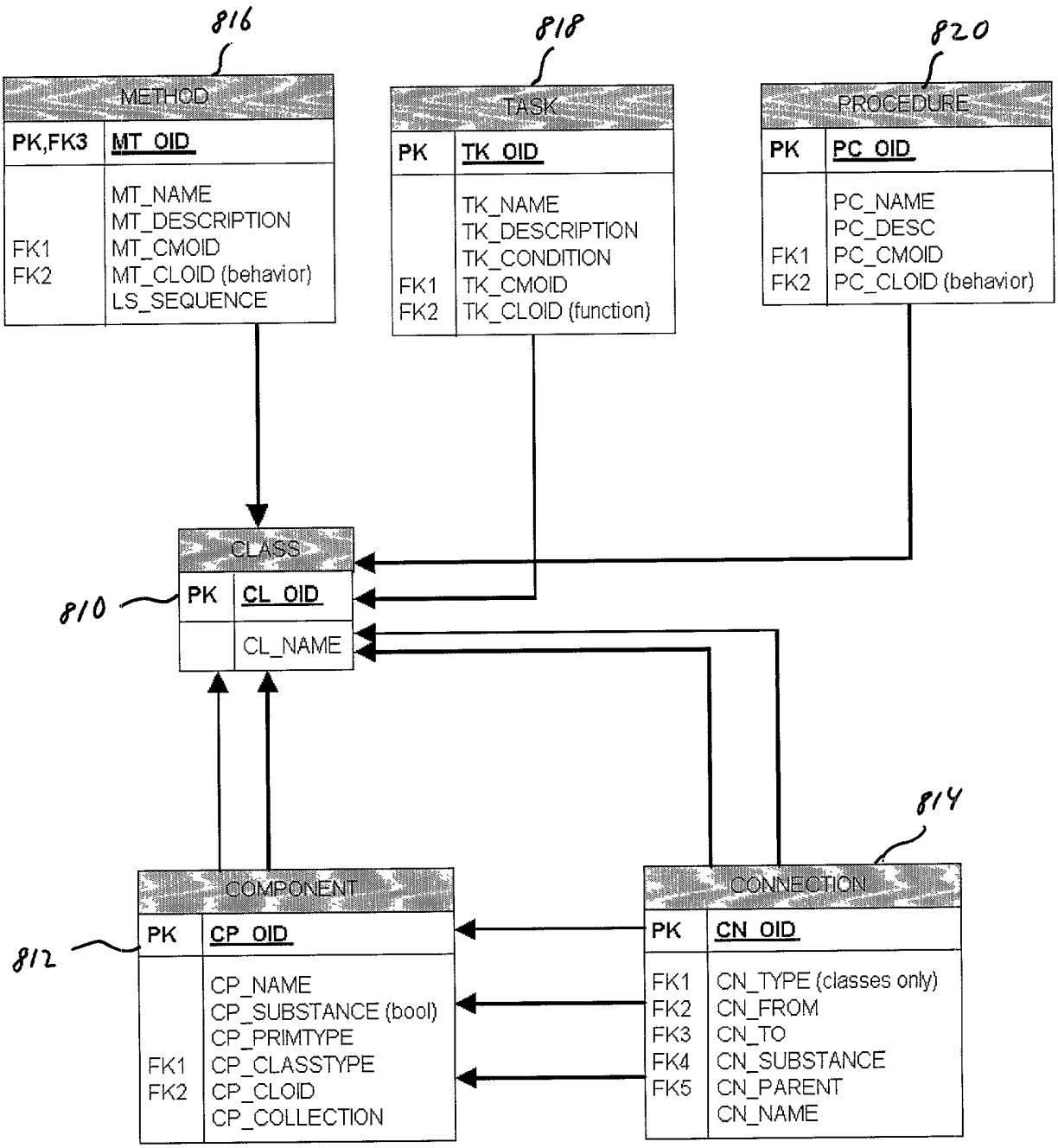
816
METHOD
PK,FK3 MT_OID
MT_NAME
MT_DESCRIPTION
FK1 MT_CMOID
FK2 MT_CLOID (behavior)
LS_SEQUENCE
818
TASK
PK TK_OID
TK_NAME
TK_DESCRIPTION
TK_CONDITION
FK1 TK_CMOID
FK2 TK_CLOID (function)
820
PROCEDURE
PK PC_OID
PC_NAME
PC_DESC
FK1 PC_CMOID
FK2 PC_CLOID (behavior)
CLASS
810
PK CL_OID
CL_NAME
814
COMPONENT
812
PK CP_OID
CP_NAME
CP_SUBSTANCE (bool)
CP_PRIMTYPE
FK1 CP_CLASSTYPE
FK2 CP_CLOID
CP_COLLECTION
CONNECTION
PK CN_OID
FK1 CN_TYPE (classes only)
FK2 CN_FROM
FK3 CN_TO
FK4 CN_SUBSTANCE
FK5 CN_PARENT
CN_NAME

Fig. 8